



GeneInact seq (2000)-2.ST25.txt  
SEQUENCE LISTING

<110> GMR Epigenetics Corporation  
<120> Gene inactivation by targeted DNA methylation  
<130> GMR-001ORD  
<140> US 09/643,128  
<141> 2000-08-21  
<150> US 60/196,749  
<151> 2000-04-12  
<150> US 60/214,148  
<151> 2000-06-26  
<160> 54  
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<223> 1): Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions 7 and 10.  
2). Semi-methylated hairpin loop  
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<222> (1)..(22)  
<223> 1): Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions 5, 9 and 20

11

## 2). Semi-methylated hairpin loop

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(22)

&lt;400&gt; 2

agcccgggct gggaggagtc gg

22

&lt;210&gt; 3

&lt;211&gt; 33

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; This sequence is complementary to and methylates a human sequence.

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(33)

&lt;223&gt; 1): Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #7, #10, #16, #20, #31.

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(33)

&lt;223&gt; 2) Semi-methylated loop

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(33)

&lt;400&gt; 3

cgacgtcgtc gagcccgggc tgggaggagt cgg

33

&lt;210&gt; 4

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; This sequence is complementary to and methylates a human sequence.

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(21)

&lt;223&gt; 1): Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2, #12 and #19.

2). Sequence derived from the promoter of human c-myc gene.

3). Semi-methylated loop.

&lt;220&gt;

&lt;221&gt; CpG dinucleotide

&lt;222&gt; (1)..(21)

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 2) Complementary to promoter of human c-myc.  
 3) Semi-methylated hairpin.

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 2) Sequence complementary to the promoter of human c-myc gene.  
 3) Semi-methylated hairpin.

GeneInact seq (2000)-2.ST25.txt

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2). Sequence derived from the promoter of HIV gene.

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2) Sequence derived from the promoter of human uPAR gene.

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GeneInact seq (2000)-2.ST25.txt

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GeneInact seq (2000)-2.ST25.txt

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GeneInact seq (2000)-2.ST25.txt

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Page 11

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3). Semi-methylated hairpin loop.

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3). Semi-methylated hairpin loop.

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2). Sequence derived from the promoter of human VEGF gene.

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sequence.

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18

<210> 29  
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GeneInact seq (2000)-2.ST25.txt

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 3). Semi-methylated hairpin loop.

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2). Sequence derived from the promoter of human TNF-alpha gene.

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2). Sequence derived from the promoter of human TNF-alpha gene.

3). Semi-methylated hairpin loop.

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2). Sequence derived from the promoter of human TNF-alpha gene.

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2). Sequence derived from the promoter of human TNF-beta gene.

3). Semi-methylated hairpin loop.

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<222> (1)..(21)

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tcgccccagg gacatataaa g

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2). Sequence derived from the promoter of human TNF-beta gene.

3). Semi-methylated hairpin loop.

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2). Sequence derived from the promoter of human TNF-beta gene.

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2). Sequence derived from the promoter of human interleukin 4 gene.

3). Semi-methylated hairpin loop.

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2). Sequence derived from the promoter of human IL-4 gene.

3). Semi-methylated hairpin loop.

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19

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<222> (1)..(19)

<223> 3). Semi-methylated hairpin loop.

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<220>

<223> This sequence is complementary to and methylates a human sequence.

<220>

<221> CpG dinucleotide

<222> (1)..(19)

<223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2 and #9.

2). Sequence derived from the promoter of human GM-CSF gene.

3). Semi-methylated hairpin loop.

<220>

<221> CpG dinucleotide

<222> (1)..(19)

<400> 39

ccgcctccct ggcattttg

19

<210> 40

<211> 19

<212> DNA

<213> Artificial sequence

<220>

<223> This sequence is complementary to and methylates a human sequence.

GeneInact seq (2000)-2.ST25.txt

<220>  
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 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at position #2.  
 2). Sequence derived from the promoter of human IL-2 gene.  
 3). Semi-methylated hairpin loop.

<400> 40  
 ccagagagaa gagtataat 19

<210> 41  
 <211> 18  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> This sequence is complementary to and methylates a human sequence.

<220>  
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 <222> (1)..(18)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at position #5.  
 2). Sequence derived from the promoter of human bcl-2 gene.  
 3). Semi-methylated hairpin loop.

<400> 41  
 atagctggat tataactc 18

<210> 42  
 <211> 18  
 <212> DNA  
 <213> Artificial sequence

<220>  
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<220>  
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 <222> (1)..(18)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at position #2.  
 2). Sequence derived from the promoter of human bcl-2 gene.  
 3). Semi-methylated hairpin loop.

<400> 42  
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<210> 43

GeneInact seq (2000)-2.ST25.txt

<211> 18  
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<220>  
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 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at position #13.  
 2). Sequence derived from the promoter of human HBV gene.  
 3). Semi-methylated hairpin loop.

<400> 43  
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18

<210> 44  
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 2). Sequence derived from the promoter of human HBV gene.  
 3). Semi-methylated hairpin loop.

<220>  
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<400> 44  
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<210> 45  
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<222> (1)..(18)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #4, #13 and #15.

2). Sequence derived from the promoter of human HBV gene.

<220>  
 <221> CpG dinucleotide  
 <222> (1)..(18)  
 <223> 3). Semi-methylated hairpin loop.

<400> 45  
 agacggtgag accgcgta

18

<210> 46  
 <211> 19  
 <212> DNA  
 <213> Artificial sequence

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<220>  
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 <222> (1)..(19)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at position #16.

2). Sequence derived from the promoter of human HBV gene.

3). Semi-methylated hairpin loop.

<400> 46  
 tgcattggtgc tgggtgcga

19

<210> 47  
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<220>  
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<220>  
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 <222> (1)..(20)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #5, #12 and #18.

2). Sequence derived from the promoter of CMV gene.

<220>  
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<400> 47

tgggcggtag gcgtgtacgg

<210> 48  
 <211> 19  
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<220>  
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<220>  
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 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2, #14 and #17.  
 2). Sequence derived from the promoter of CMV gene.

<220>  
 <221> CpG dinucleotide  
 <222> (1)..(19)  
 <223> 3). Semi-methylated hairpin loop.

<400> 48  
 acggtaaatg gcccgcctg

19

<210> 49  
 <211> 18  
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<220>  
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 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2 and #13.  
 2). Sequence derived from the promoter of CMV gene.

<220>  
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 <222> (1)..(18)  
 <223> 3). Semi-methylated hairpin loop.

<400> 49  
 gcgtcaatgg ggcggagt

18

<210> 50  
 <211> 20  
 <212> DNA  
 <213> Artificial sequence

<220>

<223> This sequence is complementary to and methylates a human sequence.

<220>

<221> CpG dinucleotide

<222> (1)..(20)

<223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2 and #17.

2). Sequence derived from the promoter of human c-fos gene.

<220>

<221> CpG dinucleotide

<222> (1)..(20)

<223> 3). Semi-methylated hairpin loop.

<400> 50

acgcttggtta taaaagcagt

20

<210> 51

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> This sequence is complementary to and methylates a human sequence.

<220>

<221> CpG dinucleotide

<222> (1)..(20)

<223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2, #13 and #18.

2). Sequence derived from the promoter of human c-fos gene.

<220>

<221> CpG dinucleotide

<222> (1)..(20)

<223> 3). Semi-methylated hairpin loop.

<400> 51

tcgtactcca accgcatctg

20

<210> 52

<211> 19

<212> DNA

<213> Artificial sequence

<220>

<223> This sequence is complementary to and methylates a human sequence.

<220>

<221> CpG dinucleotide

<222> (1)..(19)

<223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2, #15 and #17.



2). Sequence derived from the promoter of human raf-1 gene.

<220>  
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 <222> (1)..(19)  
 <223> 3). Semi-methylated hairpin loop.

<400> 52  
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19

<210> 53  
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 <212> DNA  
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<220>  
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<220>  
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 <222> (1)..(18)  
 <223> 1). Phosphothioate oligonucleotide modified with 5-methylcytidine (m5C) at positions #2, #4 and #12.

2). Sequence derived from the promoter of human raf-1 gene.

<220>  
 <221> CpG dinucleotide  
 <222> (1)..(18)  
 <223> 3). Semi-methylated hairpin loop.

<400> 53  
 tcgcgagaa tcggaggc

18

<210> 54  
 <211> 22  
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<220>  
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 <301> Yao X, Hu JF, Daniels M, Shiran H, Zhou X, Yan H, Lu H, Zeng Z, Wang Q, Li T, Hoffman AR.  
 <302> A methylated oligonucleotide inhibits IGF2 expression and enhances survival in a model of hepatocellular carcinoma.  
 <303> J Clin Invest  
 <304> 111  
 <305> 2  
 <306> 265-273  
 <307> 2003-01-15  
 <308> 12531883  
 <309> 2003-03-15  
 <313> (1)..(22)

<400> 54

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22